REMARKS

Claim Status

Claims 51-59, 62-72 remain pending.

Claim Rejections - 35 U.S.C. § 102

In the Office Action mailed on November 4, 2004, claims 51, 59, 62 and 70-72 have been rejected as allegedly being unpatentable under 35 U.S.C. § 102 over U.S. Patent No. 5,920,319 to Vining *et al.* (Vining). Applicants respectfully traverse this rejection.

Claim 51 is generally directed to a method for performing computer aided diagnosis on a 3D, volumetric representation, of a region of interest. More particularly, Claim 51 is directed to computer aided diagnosis in which a local surface *texture* feature is used to identify a region which is indicative of an anomaly. Independent Claim 62 is directed to a method of computer aided diagnosis in which both a local surface texture and a geometric (shape) feature are used to identify anomalies. It is respectfully submitted that Vining does not teach or suggest the claimed invention and that the current rejection is based on an improper reading of the Vining reference.

The Vining reference does not disclose, teach or suggest the use of textural surface features. Instead, Vining discloses *only* the use of shape features. As noted in the Office Action dated March 24, 2004 (Paper 13), Vining does not disclose "textural features indicative of an anomaly." This certainly is true and remains true about the Vining reference. In this regard, Applicants have amended the claim language to be even more specific. Applicants now note that Vining does not disclose "identif[ying] a local surface texture feature, different from the context texture feature, which is indicative of an abnormality." Nor is there even a

suggestion as to the desirability for the detection of local surface textures, the comparison of local surface textures to context surface textures or that surface texture (as opposed to shape features) may be indicative of an anomaly. The portions of the Vining reference cited by the Examiner make it clear that Vining is only disclosing changes in shape, not texture. (See e.g., Fig. 5; see Col. 12, lines 39-52).

As the current application makes clear, surface texture analysis and geometric feature (shape) analysis are simply not the same. Indeed, different analysis techniques are invoked to analyze the two different concepts. (See Specification, page 77, line 13, through page 79, line 11 for a discussion of texture analysis and compare with page 79, line 12 through page 80, line 16 for a discussion on geometrical or shape feature analysis.) In the simplest of terms, Vining only discloses detection of a "bump" on a surface (a "shape feature"), it does not disclose whether the bump has a smooth surface, a rough surface, or any other surface texture feature that is different from the area surrounding the bump (i.e., a comparison of a local texture feature to a context texture feature).

Independent claims 51 and 62 each recite the use of texture analysis which is neither disclosed, taught nor suggested by Vining. Therefore, claims 51 and 62, and all pending claims which depend therefrom, are patentably distinct over the Vining reference.

Claim Rejections - 35 U.S.C. § 103

In the Office Action of November 4, 2004, claims 52-58 and 63-69 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Vining in view of U.S. Patent No. 4,991,092 to Greensite (Greensite).

With respect to independent claims 51 and 62, it is respectfully submitted that the Greensite reference fails to overcome the fundamental shortcoming of the Vining reference - the absence of any disclosure regarding texture analysis. Therefore, the combination of Vining and Greensite does not render claims 51, 62 or any claim which depends from these claims, obvious.

Furthermore, with regard to claims 52 and 63, the Examiner admits that Vining fails to disclose "probability density function characterizing between two voxels." The Examiner asserts that Greensite teaches "the distance between two voxels dependent on the difference in probability, the probability density of random vector at each point of the signal space." Applicant respectfully asserts that Greensite also does not disclose such a feature.

In the section cited by the Examiner (Col. 15, lines 36-62), Greensite does not disclose a probability density function which characterizes an intensity correlation between two voxels within a defined range. The probability density of Greensite, on the other hand, is of a random vector at each point of the signal space (See Office Action at Par. 5; Col. 15, lines 6-9). The probability density of Greensite is different and distinct from the probability density function of claims 52 and 63.

Because neither Vining nor Greensite either individually or in combination teach or suggest all of the limitations of the pending claims, Applicant respectfully asserts that newly amended claim 51 is allowable.

CONCLUSION

In view of the remarks set forth above, favorable consideration and allowance of

claims 51-59, and 62 -72 are respectfully solicited.

Respectfully submitted,

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